



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Braulio A. POLANCO et al.

Serial No.: 10/749,805

Filing Date: 31 December 2003

Title: HIGH LOFT LOW DENSITY  
NONWOVEN WEBS OF CRIMPED  
FILAMENTS AND METHODS OF  
MAKING SAME

Customer No. 35844

Group No.: 1771

Examiner: J. Pierce

**SECOND SUPPLEMENTAL APPEAL BRIEF UNDER 37 C.F.R. §41.37**

**Mail Stop Appeal Brief-Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Dear Sir:

Further to their Notice of Appeal of 04 November 2005, Applicants/  
Appellants respectfully file this Appeal Brief in the above-identified application.

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

23 August 2006

23 August 2006

Date

Maxwell J. Pierce

Signature

### **1. REAL PARTY IN INTEREST**

The real party in interest is Kimberly-Clark Worldwide, Inc., the assignee of the present application (as recorded at reel 015453, frame 0236).

### **2. RELATED APPEALS AND INTERFERENCES**

There are no related prior or pending appeals, interferences or judicial proceedings known to Appellants, Appellants' legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **3. STATUS OF CLAIMS**

The application was originally filed with Claims 1-49. Claims 23, 39 and 47 are cancelled. The Claims presently under consideration are 1-22, 24-38, 40-46 and 48-49. All claims under consideration stand rejected per the final Office Action of 05 August 2005. The rejection of all claims under consideration is appealed.

By Amendment A, filed 23 May 2005, Claims 23, 39, and 47 were canceled. Claims 24-26 were amended to change their dependency. Claims 6-9, 40-42, 46, 48 and 49 were amended after discussion with the Examiner to place the claims in a more Markush-like format. The preambles of Claims 20-22 and 24-34 were amended for consistency.

Per the final Office Action of 05 August 2005, Claims 2-9, 20-22, 24-38, 40-46, 48, and 49 stand rejected under 35 USC § 112 (first paragraph) as failing to comply with the enablement requirement. Claims 2-5, 20-22, 35-38 and 43-45 stand rejected under 35 USC § 112 (second paragraph) as failing to particularly point out and distinctly claim the invention. Claims 1-15, 19-22, 24-30, 34-38, 40-46, 48 and 49 are rejected as anticipated by, or in the alternative obvious over, Pike et al. (US 5,382,400, hereinafter "Pike"). Claims 16-18 and 31-33 are rejected as obvious over Pike in view of Sudduth et al. (US 5,770,531, hereinafter "Sudduth").

### **4. STATUS OF AMENDMENTS**

An amendment was filed subsequent to the final rejection of 05 August 2005, but was not entered by the Examiner, per the Advisory Action of 24 October 2005.

## 5. SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1, 35 and 43 are independent.

Each of the claimed embodiments is defined as a nonwoven web of substantially continuous A/B bicomponent crimped fibers, having a measured formation index value for one or both of a top surface of the web and a wire surface (that surface touching the forming wire during production) of the web.

The formation index is a measurement of uniformity of formation (page 20, line 28). Means and method for attaining the formation index value are particularly described beginning at page 19, line 21. Generally, the index value is the quotient of the number of pixels in the modal (most common) optical basis weight of pixel light divided by the total number of weight classes observed, divided by a factor of 100 for normalization, when the specimen is placed on the described light source.

Webs of “substantially continuous A/B bicomponent crimped fibers” are discussed in the definitions at pages 7-9 and methods and materials useful with such webs are discussed particularly at pages 10-15 of the specification. Such webs are generally known in the art, but not by production without heat before filament collection, e.g., through using an unheated fiber draw unit (FDU) (page 6, line 10), which enables one to attain the claimed formation index values for the claimed webs.

An embodiment according to Claim 1 is defined by the relative difference between the formation index values of the two major surfaces. An embodiment according to Claim 35 is defined by formation index values on the top side of the web in relation to specified bulks of the web. An embodiment according to Claim 43 is defined by formation index values on the wire (bottom) side of the web in relation to specified bulks of the web.

TO WIT:

1. (original) A nonwoven material comprising:

- a) a web of substantially continuous A/B bicomponent crimped fibers,
- b) the web having a percentage difference between a formation index of a top side of the web and a formation index of a wire side of the web of less than about 11%.

35. (original) A nonwoven web comprising:

- a) substantially continuous A/B bicomponent crimped fibers;
- b) the web having a formation index averaging above about 37.6 on the top side of the web when the web has a bulk to about 0.1 inches in the Z axis, or
- c) the web having a formation index averaging above about 32.03 on the top side of the web when the web has a bulk of over about 0.1 inches in the Z axis.

43. (original) A nonwoven web comprising:

- a) substantially continuous A/B bicomponent crimped fibers;
- b) the web having a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk to about 0.1 inches in the Z axis, or
- c) the web having a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of over about 0.1 inches in the Z axis.

Other dependently claimed webs are additionally defined by their basis weights (4-5, 8-9, 21- 22, 25-26, 37-38, 41-42, 44-45, 48-49). Other dependently claimed webs are additionally defined by their fiber deniers (10-15 and 27-30). Other dependently claimed webs are additionally defined by their fiber additives or color (16-18 and 31-33) or the fiber bonding (19 and 34).

The person having ordinary skill in the art is given the necessary information for understanding and practicing the claimed inventions by the present specification at least at page 3, lines 5-22 (discussion of formation index value); page 8, lines 12-19 (definition of "formation index"); page 19, lines 21+ (description of formation index test procedure); and page 30, line 29 through page 32 (broad discussion of formation index, the present webs, and the test results); as well as the teachings of exemplary processes and materials for webs meeting the present claims at pages 10-15 and numerous examples of webs produced according to the present invention starting at page 23. Discussion is included to contrast webs from the known art (produced from a hot FDU) which do not conform to the present invention, such as at page 21, line 12, and Table 3, codes 14-20.

## **6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The following claim rejections are presented for review on appeal:

A. Claims 2-9, 20-22, 24-38, 40-46, 48, and 49 stand rejected under 35 USC § 112 (first paragraph) as failing to comply with the enablement requirement.

B. Claims 2-5, 20-22, 35-38 and 43-45 stand rejected under 35 USC § 112 (second paragraph) as failing to particularly point out and distinctly claim the invention.

C. Claims 1-15, 19-22, 24-30, 34-38, 40-46, 48, and 49 are rejected as anticipated by, or in the alternative obvious over, Pike et al. (US 5,382,400, hereinafter "Pike").

D. Claims 16-18 and 31-33 are rejected as obvious over Pike in view of Sudduth et al. (US 5,770,531, hereinafter "Sudduth").

E. Claims 1-49 are provisionally rejected based on obviousness-type double patenting over Claims 21-57 of pending U.S. Patent Application 10/749,461, filed 31 December 2003.

## **7. ARGUMENT**

### **A. The Claim Rejection Under 35 USC § 112, First Paragraph Should Be Reversed**

Per paragraph 3 of the Detailed Action of the final Office Action, Claims 2-9, 20-22, 24-38, 40-46, 48, and 49 stand rejected under 35 USC § 112 (first paragraph) as failing to comply with the enablement requirement. The Detailed Action contends that the specification does not teach a person having ordinary skill in the art how formation index values correlate with a basis weight or bulk of the a web because there are no discernible trends between the values.

Applicants urge that there is no legal basis for a requirement of correlation or "discernable trends" under the statute. It is apparent from the framing of this rejection that the Examiner premises his understanding of 35 USC § 112 (first paragraph) as requiring that an application teach the public how to avoid infringement of the claimed invention. This is a flawed premise and mistaken interpretation of the law. The requirement of 35 USC § 112 (first paragraph) is that an applicant teach the public how to practice the invention.

The Examiner questions why "differing" results are achieved and how a web is made to arrive at these values. The answer is: the webs having the claimed values

can be made as set forth in the specification. The values are derived from the formation index testing as set forth in the specification. Each formation index value is presented with respect to a particular web type. Some claims present lists of particular webs in the alternative, but none of the claimed structures lack an enabling disclosure. The Examiner contends that the person of ordinary skill in the art of nonwoven textiles is unable to understand the recited values merely because the values do not follow a strict linear progression. Applicants respectfully disagree, and urge that a person of ordinary skill in the nonwoven textiles art has sufficient education and training to understand and practice the presently claimed inventions from a reading of the specification. The person of skill in the art will immediately understand that, because formation index value is a physical measurement, the structural differences of a web of the present invention and a web of fibers made by known techniques are physically distinguishable by their formation index values.

There is no statutory requirement within § 112 for discernible, or strictly linear (as is being required by the Examiner), trends within a patent application or a claim. The Examiner has cited no authority for the burdensome requirement he attempts to impose on the Applicants. Nor has the Examiner set forth a reasonable basis for the conclusion that the person of ordinary skill in the art could not practice the present invention from the descriptions given in the specification. The Examiner has not provided sufficient factual findings with respect to the scope of the claims, undue experimentation, or the ordinary level of skill in the art to provide a *prima facie* case for this rejection. Applicants further urge that no reasonable findings with respect to the ordinary level of skill in the art could support a *prima facie* case for this rejection.

As the present rejections have no basis in law or fact, it is respectfully requested that the Board overturn the present rejections.

**B. The Claim Rejection Under 35 U.S.C. § 112, Second Paragraph  
Should Be Reversed**

Per paragraph 5 of the Detailed Action the final Office Action, Claims 2-5, 20-22, 35-38 and 43-45 stand rejected under 35 USC § 112 (second paragraph) as failing to particularly point out and distinctly claim the invention because: "...it is unclear how a nonwoven material can have two or more different bulk values or two or more different basis weights. For example, claim 2 recites the web has a formation index above 37.6

when the web has a bulk of to about 0.1 inches, but the same claim also recites the web has a formation index above 32.03 when the web has a bulk of over about 0.1 inches. How can a fabric have two different bulk values?"

The factual basis of this rejection is clearly in error. The Claims to a material which list more than two basis weights or bulk values are recited in the alternative. In the complained of Claim 2, the transition phrase "or wherein" is interposed between the clearly defined alternative limitations further describing the material of Claim 1. Claim 2's description of alternatively limiting embodiments has no vague or ambiguous language which would give rise to a lack of understanding by a person having ordinary skill in the art. Other such Claims, now considered compliant, were placed in the permissible claim form of alternative members of a Markush group by Amendment A, per previous discussion with the Examiner. Thus, the subject matter of each claim is particularly pointed out and distinctly claimed.

The Examiner has not provided sufficient factual findings with respect to a lack of clarity within the claims to support a *prima facie* case for this rejection. Applicants further contend that no reasonable interpretation of the claims at issue or reasonable findings with respect to the ordinary level of understanding of one of skill in the art could support a *prima facie* case for this rejection.

As the present rejections have no basis in law or fact, it is respectfully requested that the Board overturn the present rejections.

### **C. The Claim Rejections Based On Pike Should Be Reversed**

Per paragraph 8 of the Detailed Action of the final Office Action, Claims 1-15, 19-22, 24-30, 34-38, 40-46, 48 and 49 are rejected as anticipated by, or in the alternative obvious over, Pike et al. (US 5,382,400, hereinafter "Pike").

The factual basis and legal conclusions of this rejection are clearly in error and the Examiner has not provided sufficient findings drawn from the art itself to support a *prima facie* case for this rejection.

It is the contention of the Detailed Action that a material according to Pike would inherently meet (or make obvious) the limitations of the present claims. "Support for said presumption is found in the use of similar materials ... and in the similar production steps ... used to produce the nonwoven fabric."

The Examiner cannot deem Pike to inherently meet the limitations of the present claims. Such a “deeming” is explicitly prohibited by the teachings of the present specification. The present invention teaches that its claimed webs can be attained by cold FDU production, and clearly and deliberately contrasts the claimed webs with those webs made by a “hot FDU” production such as in Pike or Strack et al., U.S. Patent 5,336,552 (*infra*).

Pike teaches a hot FDU production of the fibers and does not teach a cold FDU production. Hot FDU production is cited in the specification as a basis to distinguish the present invention from the known art. At page 21, line 12, of the specification, Strack et al., Pike, and the family of hot FDU fiber production technologies are cited to the reader as a basis of comparison to the present invention. Applicants state:

The fabrication techniques of a bicomponent spunbond according to Strack et al. (*supra*), hereinafter “hot FDU bicomponent spunbond,” do not utilize the particular steps as taught herein to encourage the production and maintenance of maximum loft of the web. Further, the hot FDU will be recognized by the person having ordinary skill in the art as a limitation on fiber production which the present invention overcomes. [emphasis added]

Further, in the specification at page 28, line 6, non-conforming Examples 14-20 of Table 3 are noted as “hot FDU bicomponent spunbond examples” to wit: “Example 14 was produced according to the above-described hot FDU bicomponent spunbond technology of Strack et al. (*supra*)” Each of non-conforming Examples 15-20 thereafter further recite that they are: “produced according to the above-described hot FDU bicomponent spunbond technology.”

Applicants have taken great care within the specification to teach the public regarding the distinctions and differences of process and result between a Pike-type “hot FDU” production and the present invention. For the Examiner to ignore the contrary evidence in the specification and merely deem Pike to meet the limitations of the present claims is clear error.

Thus, the Examiner’s presumption of obviousness based on inherency of resultant properties due to “similar production steps” fails. As the present rejections have no basis in law or fact, it is respectfully requested that the Board overturn the present rejections.



**D. The Claim Rejections Based On Pike In View Of Sudduth Should Be Reversed**

Per paragraph 9 of the Detailed Action of the final Office Action, Claims 16-18 and 31-33 are rejected as obvious over Pike in view of Sudduth et al. (US 5,770,531, hereinafter "Sudduth").

The factual basis and legal basis of this rejection are clearly in error.

It is the contention of the Detailed Action that while Pike does not teach adding titanium dioxide to fibers, per the present Claims, Sudduth supplies this missing teaching.

Applicants respectfully submit that a *prima facie* case of obviousness has not been made because the Examiner's conclusion of Pike's inherent teaching, per the above discussion, has been refuted. Sudduth provides no further teaching as to a web of substantially continuous A/B bicomponent crimped fibers which would meet the limitations of the present claims.

Thus, Applicants contend that the Examiner has not provided sufficient findings drawn from the art itself to support a *prima facie* case for this rejection. It is therefore respectfully requested that the Board overturn the present rejections.

**E. The Provisional Double Patenting Rejection Has Been Overcome**

The Examiner provisionally rejected Claims 1-49 based on obviousness-type double patenting over Claims 21-57 of U.S. Patent Application 10/749,461, filed 31 December 2003. This rejection has been overcome by filing a Terminal Disclaimer with the appropriate fee.

A Terminal Disclaimer is a statutory procedure that can be exercised by Applicants at any time for any reason, or for no reason at all. See 37 C.F.R. § 1.321(b) and (c) and 35 U.S.C. § 253. A Terminal Disclaimer may be filed before or after the close of prosecution, or even after a patent issues. The Examiner has no discretion on whether or not to enter a Terminal Disclaimer filed at any time.

Furthermore, a condition precedent to an obviousness-type double patenting rejection is the existence of a risk that a later-filed patent application will, if issued, prolong the term of an earlier-filed patent application, if issued. There is no such risk in the present case. The present application has an effective priority date of 21 December 2001 and will, if issued, expire on 21 December 2021. The reference patent application (Serial

No. 10/749,461) has an effective filing date of 21 December 2001 and will, if issued, expire on 21 December 2021. Because both patents would expire on the same day, neither can extend the term of the other. This rejection should be reversed.

#### F. Conclusion

Per Applicants' above discussion, a reasonable interpretation of the invention as a whole<sup>1</sup> as set forth in the present Claims, and as informed by the specification of the application, has not been made in applying the present rejections. The claims are enabled and understandable to a person of skill in the art upon a reading of the application as a whole. No *prima facie* case for either §112 rejection has been made. The present §102 and §103 rejections are based on an interpretation of the art directly contradictory to the teachings of the present specification. Reasonable interpretations of Pike's teachings and of the present invention as a whole, and a proper comparison between the two, would not sustain the present §102 or §103 rejections. No *prima facie* case for the present §102 and §103 rejections has been made.

The Examiner has apparently ignored the fact that the formation index value is a physical measurement of web structure. The Examiner has found one point of agreement between Pike and the present invention, i.e., a web of crimped bicomponent fibers, in making the rejections. The Examiner has then impermissibly attributed teachings to the cited art, rather than viewing the present invention (and the cited references) as a whole. The actual teachings of the cited art do not reasonably teach or suggest the present invention as a whole.<sup>2</sup>

In light of all the foregoing discussion, it is requested that all of the present rejections be overturned by the Board.

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<sup>1</sup> It is well established that the invention must be considered as a whole. See e.g., *Lear Siegler, Inc. v Aeroquip Corp.*, 221 USPQ 1025, (Fed. Cir. 1984).

<sup>2</sup> It is also well established that the teachings must stem from the prior art (and not arise *post hoc* from the reader of the claims). See e.g., *In re Geiger*, 2 USPQ 2d 1276 (Fed Cir. 1987).

**8. CLAIMS APPENDIX**

An appendix containing a copy of the claims involved in the appeal, with the parenthetical status indicators as contained in Applicants' Amendment A, as filed 23 May 2005, is attached hereto.

**9. EVIDENCE APPENDIX**

Not applicable.

**10. RELATED PROCEEDING APPENDIX**

Not applicable.

For all the foregoing reasons it is respectfully requested that the Board rule in Applicants' favor and overturn all outstanding rejections.

A check in the amount of \$500.00 was previously submitted as payment of the fee for filing an Appeal Brief under 37 C.F.R. §1.17(c).

Favorable consideration is requested.

Respectfully submitted,



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**APPENDIX OF THE CLAIMS**

1. (original) A nonwoven material comprising:
  - a) a web of substantially continuous A/B bicomponent crimped fibers,
  - b) the web having a percentage difference between a formation index of a top side of the web and a formation index of a wire side of the web of less than about 11%.
  
2. (original) The nonwoven material according to Claim 1 wherein:
  - a) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a bulk to about 0.1 inches in the Z axis, or wherein
  - b) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a bulk of over about 0.1 inches in the Z axis.
  
3. (original) The nonwoven material according to Claim 1 wherein:
  - a) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk to about 0.1 inches in the Z axis, or wherein
  - b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of over about 0.1 inches in the Z axis.
  
4. (original) The nonwoven material according to Claim 1 wherein:
  - a) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of up to 1.5 osy, or wherein
  - b) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of over about 1.5 osy.
  
5. (original) The nonwoven material according to Claim 1 wherein:
  - a) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of up to 1.5 osy, or wherein
  - b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of over about 1.5 osy.

6. (previously presented) The nonwoven material according to Claim 1 wherein the nonwoven material is selected from the group consisting of:

- i) the web has a formation index averaging above about 19.07 on the top side of the web when the web has a bulk of about 0.35 inches in the Z axis,
- ii) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a bulk of about 0.12 inches in the Z axis,
- iii) the web has a formation index averaging above about 28.73 on the top side of the web when the web has a bulk of about 0.1 inches in the Z axis,
- iv) the web has a formation index averaging above about 34.63 on the top side of the web when the web has a bulk of about 0.08 inches in the Z axis, and
- v) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a bulk of about 0.07 inches in the Z axis.

7. (previously presented) The nonwoven material according to Claim 1 wherein the nonwoven material is selected from the group consisting of:

- i) the web has a formation index averaging above about 31.6 on the wire side of the web when the web has a bulk of about 0.35 inches in the Z axis,
- ii) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of about 0.12 inches in the Z axis,
- iii) the web has a formation index averaging above about 35.37 on the wire side of the web when the web has a bulk of about 0.1 inches in the Z axis,
- iv) the web has a formation index averaging above about 38.98 on the wire side of the web when the web has a bulk of about 0.08 inches in the Z axis, and
- v) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk of about 0.07 inches in the Z axis.

8. (previously presented) The nonwoven material according to Claim 1 wherein the nonwoven material is selected from the group consisting of:

- i) the web has a formation index averaging above about 19.07 on the top side of the web when the web has a basis weight of about 6.0 osy,
- ii) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of about 2.5 osy,

iii) the web has a formation index averaging above about 30.27 on the top side of the web when the web has a basis weight of about 2.25 osy,

iv) the web has a formation index averaging above about 28.73 on the top side of the web when the web has a basis weight of about 1.5 osy,

v) the web has a formation index averaging above about 31.07 on the top side of the web when the web has a basis weight of about 1.2 osy,

vi) the web has a formation index averaging above about 34.63 on the top side of the web when the web has a basis weight of about 1.0 osy, and

vii) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of about 0.75 osy.

9. (previously presented) The nonwoven material according to Claim 1 wherein the nonwoven material is selected from the group consisting of:

i) the web has a formation index averaging above about 31.6 on the wire side of the web when the web has a basis weight of about 6.0 osy,

ii) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of about 2.5 osy,

iii) the web has a formation index averaging above about 35.03 on the wire side of the web when the web has a basis weight of about 2.25 osy,

iv) the web has a formation index averaging above about 35.37 on the wire side of the web when the web has a basis weight of about 1.5 osy,

v) the web has a formation index averaging above about 37.15 on the wire side of the web when the web has a basis weight of about 1.2 osy,

vi) the web has a formation index averaging above about 38.98 on the wire side of the web when the web has a basis weight of about 1.0 osy, and

vii) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of about 0.75 osy.

10. (original) The nonwoven material of Claim 1 wherein the fibers have a fiber denier of between about 0.1 dpf to about 9.0 dpf.

11. (original) The nonwoven material of Claim 10 wherein the fibers have a fiber denier of between about 0.1 dpf to about 6.0 dpf.

12. (original) The nonwoven material of Claim 10 wherein the fibers have a fiber denier of between about 0.1 dpf to about 5.0 dpf.

13. (original) The nonwoven material of Claim 11 wherein the fibers have a fiber denier of between about 0.1 dpf to about 4.2 dpf.

14. (original) The nonwoven material of Claim 12 wherein the fibers have a fiber denier of between about 0.1 dpf to about 3.3 dpf.

15. (original) The nonwoven material of Claim 10 wherein the fibers have a fiber denier of between about 3.4 dpf to about 4.2 dpf.

16. (original) The nonwoven material of Claim 15 wherein the fibers have a substantially white color.

17. (original) The nonwoven material of Claim 16 wherein the fibers have a  $\text{TiO}_2$  percentage of about 0.1% to about 5%.

18. (original) The nonwoven material of Claim 17 wherein the fibers have a  $\text{TiO}_2$  percentage of about 2%.

19. (original) The nonwoven material according to Claim 1 wherein the fibers of the nonwoven web are integrally bonded.

20. (previously presented) The nonwoven material according to Claim 2 wherein:

a) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk to about 0.1 inches in the Z axis, or wherein

b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of over about 0.1 inches in the Z axis.

21. (previously presented) The nonwoven material according to Claim 20 wherein:

a) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of up to 1.5 osy, or wherein

b) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of over about 1.5 osy.

22. (previously presented) The nonwoven material according to Claim 21 wherein:

a) the web having a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of up to 1.5 osy, or wherein

b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of over about 1.5 osy.

23. (canceled)

24. (previously presented) The nonwoven material according to Claim 2 wherein the nonwoven material is selected from the group consisting of:

i) the web has a formation index averaging above about 31.6 on the wire side of the web when the web has a bulk of about 0.35 inches in the Z axis,

ii) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of about 0.12 inches in the Z axis,

iii) the web has a formation index averaging above about 35.37 on the wire side of the web when the web has a bulk of about 0.1 inches in the Z axis,

iv) the web has a formation index averaging above about 38.98 on the wire side of the web when the web has a bulk of about 0.08 inches in the Z axis, and

v) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk of about 0.07 inches in the Z axis.



25. (previously presented) The nonwoven material according to Claim 20 wherein the nonwoven material is selected from the group consisting of:

- i) the web which has a formation index averaging above about 19.07 on the top side of the web when the web has a basis weight of about 6.0 osy,
- ii) the web which has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of about 2.5 osy,
- iii) the web which has a formation index averaging above about 30.27 on the top side of the web when the web has a basis weight of about 2.25 osy,
- iv) the web which has a formation index averaging above about 28.73 on the top side of the web when the web has a basis weight of about 1.5 osy,
- v) the web which has a formation index averaging above about 31.07 on the top side of the web when the web has a basis weight of about 1.2 osy,
- vi) the web which has a formation index averaging above about 34.63 on the top side of the web when the web has a basis weight of about 1.0 osy, and
- vii) the web which has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of about 0.75 osy.

26. (previously presented) The nonwoven material according to Claim 21 wherein the nonwoven material is selected from the group consisting of:

- i) the web which has a formation index averaging above about 31.6 on the wire side of the web when the web has a basis weight of about 6.0 osy,
- ii) the web which has a formation index averaging above about 35.03 on the wire side of the web when the web has a basis weight of about 2.25 osy,
- iii) the web which has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of about 2.5 osy,
- iv) the web which has a formation index averaging above about 35.37 on the wire side of the web when the web has a basis weight of about 1.5 osy,
- v) the web which has a formation index averaging above about 37.15 on the wire side of the web when the web has a basis weight of about 1.2 osy,
- vi) the web which has a formation index averaging above about 38.98 on the wire side of the web when the web has a basis weight of about 1.0 osy, and
- vii) the web which has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of about 0.75 osy.

27. (previously presented) The nonwoven material of Claim 26 wherein the fibers have a fiber denier of between about 0.1 dpf to about 6.0 dpf.

28. (previously presented) The nonwoven material of Claim 27 wherein the fibers have a fiber denier of between about 0.1 dpf to about 4.2 dpf.

29. (previously presented) The nonwoven material of Claim 28 wherein the fibers have a fiber denier of between about 0.1 dpf to about 3.3 dpf.

30. (previously presented) The nonwoven material of Claim 27 wherein the fibers have a fiber denier of between about 3.4 dpf to about 4.2 dpf.

31. (previously presented) The nonwoven material of Claim 26 wherein the fibers have a substantially white color.

32. (previously presented) The nonwoven material of Claim 31 wherein the fibers have a  $\text{TiO}_2$  percentage of about 0.1% to about 5%.

33. (previously presented) The nonwoven material of Claim 32 wherein the fibers have a  $\text{TiO}_2$  percentage of about 2%.

34. (previously presented) The nonwoven material according to Claim 26 wherein the fibers of the nonwoven web are integrally bonded.

35. (original) A nonwoven web comprising:

- a) substantially continuous A/B bicomponent crimped fibers;
- b) the web having a formation index averaging above about 37.6 on the top side of the web when the web has a bulk to about 0.1 inches in the Z axis, or
- c) the web having a formation index averaging above about 32.03 on the top side of the web when the web has a bulk of over about 0.1 inches in the Z axis.

36. (original) The nonwoven web according to Claim 35 wherein:

- a) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk to about 0.1 inches in the Z axis, or wherein
- b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of over about 0.1 inches in the Z axis.

37. (original) The nonwoven web according to Claim 35 wherein:

- a) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of up to 1.5 osy, or wherein
- b) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of over about 1.5 osy.

38. (original) The nonwoven web according to Claim 35 wherein:

- a) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of up to 1.5 osy, or wherein
- b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of over about 1.5 osy.

39. (canceled)

40. (previously presented) The nonwoven web according to Claim 35 wherein the nonwoven web is selected from the group consisting of:

- i) the web has a formation index averaging above about 31.6 on the wire side of the web when the web has a bulk of about 0.35 inches in the Z axis,
- ii) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of about 0.12 inches in the Z axis,
- iii) the web has a formation index averaging above about 35.37 on the wire side of the web when the web has a bulk of about 0.1 inches in the Z axis,
- iv) the web has a formation index averaging above about 38.98 on the wire side of the web when the web has a bulk of about 0.08 inches in the Z axis, and
- v) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk of about 0.07 inches in the Z axis.

41. (previously presented) The nonwoven web according to Claim 35 wherein the nonwoven web is selected from the group consisting of:

- i) the web has a formation index averaging above about 19.07 on the top side of the web when the web has a basis weight of about 6.0 osy,
- ii) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of about 2.5 osy,
- iii) the web has a formation index averaging above about 30.27 on the top side of the web when the web has a basis weight of about 2.25 osy,
- iv) the web has a formation index averaging above about 28.73 on the top side of the web when the web has a basis weight of about 1.5 osy,
- v) the web has a formation index averaging above about 31.07 on the top side of the web when the web has a basis weight of about 1.2 osy,
- vi) the web has a formation index averaging above about 34.63 on the top side of the web when the web has a basis weight of about 1.0 osy, and
- vii) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of about 0.75 osy.

42. (previously presented) The nonwoven web according to Claim 35 wherein the nonwoven web is selected from the group consisting of:

- i) the web has a formation index averaging above about 31.6 on the wire side of the web when the web has a basis weight of about 6.0 osy,
- ii) the web has a formation index averaging above about 35.03 on the wire side of the web when the web has a basis weight of about 2.25 osy,
- iii) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of about 2.5 osy,
- iv) the web has a formation index averaging above about 35.37 on the wire side of the web when the web has a basis weight of about 1.5 osy,
- v) the web has a formation index averaging above about 37.15 on the wire side of the web when the web has a basis weight of about 1.2 osy,
- vi) the web has a formation index averaging above about 38.98 on the wire side of the web when the web has a basis weight of about 1.0 osy, and
- vii) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of about 0.75 osy.

43. (original) A nonwoven web comprising:

- a) substantially continuous A/B bicomponent crimped fibers;
- b) the web having a formation index averaging above about 43.76 on the wire side of the web when the web has a bulk to about 0.1 inches in the Z axis, or
- c) the web having a formation index averaging above about 37.09 on the wire side of the web when the web has a bulk of over about 0.1 inches in the Z axis.

44. (original) The nonwoven web according to Claim 43 wherein:

- a) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a basis weight of up to 1.5 osy, or wherein
- b) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a basis weight of over about 1.5 osy.

45. (original) The nonwoven web according to Claim 43 wherein:

- a) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of up to 1.5 osy, or wherein
- b) the web has a formation index averaging above about 37.09 on the wire side of the web when the web has a basis weight of over about 1.5 osy.

46. (previously presented) The nonwoven web according to Claim 43 wherein the nonwoven web is selected from the group consisting of:

- i) the web has a formation index averaging above about 19.07 on the top side of the web when the web has a bulk of about 0.35 inches in the Z axis,
- ii) the web has a formation index averaging above about 32.03 on the top side of the web when the web has a bulk of about 0.12 inches in the Z axis,
- iii) the web has a formation index averaging above about 28.73 on the top side of the web when the web has a bulk of about 0.1 inches in the Z axis,
- iv) the web has a formation index averaging above about 34.63 on the top side of the web when the web has a bulk of about 0.08 inches in the Z axis, and
- v) the web has a formation index averaging above about 37.6 on the top side of the web when the web has a bulk of about 0.07 inches in the Z axis.

47. (canceled)

48. (previously presented) The nonwoven web according to Claim 43 wherein the nonwoven web is selected from the group consisting of:

- i) the web has a formation index averaging above about 19.07 on the top side of the web having a basis weight of about 6.0 osy,
- ii) the web has a formation index averaging above about 32.03 on the top side of the web having a basis weight of about 2.5 osy,
- iii) the web has a formation index averaging above about 30.27 on the top side of the web having a basis weight of about 2.25 osy,
- iv) the web has a formation index averaging above about 28.73 on the top side of the web having a basis weight of about 1.5 osy,
- v) the web has a formation index averaging above about 31.07 on the top side of the web having a basis weight of about 1.2 osy,
- vi) the web has a formation index averaging above about 34.63 on the top side of the web having a basis weight of about 1.0 osy, and
- vii) the web has a formation index averaging above about 37.6 on the top side of the web having a basis weight of about 0.75 osy.

49. (previously presented) The nonwoven web according to Claim 43 wherein the nonwoven web is selected from the group consisting of:

- i) the web has a formation index averaging above about 31.6 on the wire side of the web when the web a basis weight of about 6.0 osy,
- ii) the web has a formation index averaging above about 35.03 on the wire side of the web when the web a basis weight of about 2.25 osy,
- iii) the web has a formation index averaging above about 37.09 on the wire side of the web when the web a basis weight of about 2.5 osy,
- iv) the web has a formation index averaging above about 35.37 on the wire side of the web when the web a basis weight of about 1.5 osy,
- v) the web has a formation index averaging above about 37.15 on the wire side of the web when the web a basis weight of about 1.2 osy,
- vi) the web has a formation index averaging above about 38.98 on the wire side of the web when the web a basis weight of about 1.0 osy, and
- vii) the web has a formation index averaging above about 43.76 on the wire side of the web when the web has a basis weight of about 0.75 osy.